WHAT IS CLAIMED IS:

1. A communication system comprising:

plural, mobile transceivers, spaced from one another;

means for sending messages from a first of said transceivers to a second of said transceivers wherein each message is relayed by one or more but not by all transceivers located generally between said first transceiver and said second transceiver.

2. The communication system of Claim 1 wherein the selection of transceivrs which relay messages is generally cyclical such that all transceivers between said first receiver and said second receiver periodically relay messages.

3. The communication system of Claim 2 wherein each relay of a message also serves to confirm safe receipt of the message.

4. The communication system of Claim 3 further comprising diverse antenna means at each transceiver and wherein a transceiver relaying a message on a first antenna resends the message on a second antenna in the absence of timely acknowledgement of the message sent on the first antenna.

5. The communication system of Claim 4 wherein a transceiver relaying a message to another transceiver resends the message to a third transceiver in the absence of a timely acknowledgement of the message sent to said another tranceiver.

6. The communication system of Claim 1, wherein said transceivers between said first and second transceivers are divided into at least two relay groups, and the system perodically uses each of the relay groups to relay messages.

7. A communication system for a train of nodes comprising a pilot node, a ending node and plural intermediate nodes, said intermediate nodes being generally located between said pilot node and said ending node, said communication system comprising:

a transceiver at each node;

means for periodically initiating a message at said pilot node;

means for relaying said initiated message from said pilot node to said ending node, the relaying being accomplished by some but not all of said intermediate nodes.

8. The communication system of Claim 7 further comprising:

means for reversing the direction of said message at the ending node; and,

means for relaying said reversed direction message from said ending node to said pilot node, the relaying being accomplished by some but not all of said intermediate nodes.

9. The communication system of Claim 8 wherein the nodes relaying the message from the pilot node to the ending node also relay the message from the ending node to the pilot node.

10. The communication system of Claim 7 wherein the intermediate nodes are grouped into plural relay groups.

11. The communications system of Claim 10 wherein the message is relayed only by the intermediate nodes which are the members of one of the groups.

12. The communication system of Claim 10 wherein the next message sent from said pilot node to said ending node after said message is relayed only by the intermediate nodes which are members of a different one of the groups.

13. The communication system of Claim 7 further comprising plural antennas at each node and wherein the message is resent by a relay node on a different antenna than used to send said message if the relay node does not obtain an acknowledgement of the successful reception of said message.

14. The communication system of Claim 7 wherein an intermediate node resends said message if the first sending of said message is not acknowledged within a predetermined time period.

15. The communication system of Claim 14 wherein a relaying node considers said message to be acknowledged when the relaying node hears a subsequent relay of said message.

16. The communication system of Claim 15 wherein said ending node relays said message to itself.

17. The communication system of Claim 15 wherein said pilot node relays said message to itself.

18. The communication system of Claim 8 further comprising:

means for appending additional messages to the reversed direction message.

19. In a railway train having a head end unit and plural railcars, a train control system comprising:

(a) a head end module comprising:

an operator interface device receiving inputs from the operator of the train and providing display information to the operator of the train;

a communications transceiver;

(b) a railcar module at plural of the railcars comprising:

a railcar communications transceiver;

a railcar processor which receives and decodes messages received by said railcar communications transceiver;

an electronically-controlled brake operatively connected to receive messages from said railcar processor;

whereby upon the input of a brake signal from the operator on the operator interface device, a braking message is sent by the communications transceiver in a packet addressed to one of the railcar modules, said addressed railcar module not being adjacent to the head end unit, and,

whereby said braking message is relayed by the addressed railcar module to another railcar module farther away from the

head end unit than said one of the railcar modules and not adjacent to said one of the railcar modules,

so that said braking message is received by and provided to the electronically-operated brake at each of the railcar modules between the head end unit and said another railcar module.

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